

Listing of Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. Material to be inserted is in underline, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[]]. Any cancellations are without prejudice.

1. (Currently amended) An apparatus for characterizing cells, cell aggregates and/or tissue ~~with comprising:~~

an analysis unit which includes means ~~for detecting~~ by which morphological parameters of cells, cell aggregates and/or tissue are detected, and which includes means ~~for evaluating~~ by which the detected morphological parameters are evaluated for the purpose of the objective morphological characterization of the cells, cell aggregates and/or tissue;

a database with reference parameters typical for cells, cell aggregates and/or tissue;
and

comparator means by which the detected parameters are compared with the reference parameters.

2. (Currently amended) The apparatus as claimed in claim 1, ~~characterized in that~~
wherein the analysis unit comprises an image-forming unit and an image analysis unit.

3. (Currently amended) The apparatus as claimed in claim 1 or 2, ~~characterized in that,~~ wherein the analysis unit is configured such that ~~the-a~~ degree of confluence, ~~the-a~~ cell morphology as a measure for the quality of the cell culture, ~~the-a~~ proliferation behavior, ~~the-a~~ presence of microorganisms and/or ~~the-a~~ cell differentiation can be detected and evaluated.

4. (Currently amended) The apparatus as claimed in ~~any of the preceding claims, characterized in that claim 1, wherein~~ the analysis unit includes means for the statistical evaluation of the detected morphological parameters.

5. (Canceled)

6. (Currently amended) The apparatus as claimed in ~~any of the preceding claims, characterized in that claim 1, wherein~~ the analysis unit includes means by which adjacent pixels of a detected image with similar brightness values are combined to one image object.

7. (Currently amended) An apparatus for cultivating cells, cell aggregates and/or tissue including comprising:

an incubator, ~~characterized in that the apparatus furthermore includes and~~
a device for objectively characterizing cells, cell aggregates and/or tissue ~~as claimed in any of claims 1 to 6, the device an analysis unit which includes means by which~~
morphological parameters of cells, cell aggregates and/or tissue are detected, and which includes means by which the detected morphological parameters are evaluated for the purpose of the objective morphological characterization of the cells, cell aggregates and/or tissue; a database with reference parameters typical for cells, cell aggregates and/or tissue; and comparator means by which the detected parameters are compared with the reference parameters.

8. (Currently amended) The apparatus for cultivating cells as claimed in claim 7, characterized in that wherein the apparatus furthermore includes a manipulator, a transporter for transporting one or more cell culture vessels between the incubator, the manipulator and the analysis unit as well as a control unit for operating the apparatus.

9. (Currently amended) The apparatus as claimed in claim 8, characterized in that wherein the control unit is configured such that the apparatus is operated automatically.

10. (Currently amended) A method for characterizing cells, cell aggregates and/or tissue, comprising:

~~in which detecting morphological parameters of the cells, cell aggregates and/or tissue; are detected and~~

~~then evaluating the detected morphological parameters are then evaluated in a manner suitable for the purpose of the objective morphological characterization of the cells, cell aggregates and/or tissue based on the evaluation, the detected parameters being compared with reference parameters typical for cells, cell aggregates and/or tissue, which are stored in a database.~~

11. (Currently amended) The method as claimed in claim 10, characterized in that wherein statistical values characteristic for the cells, cell aggregates and/or tissue are determined from the detected parameters ~~for the purpose of evaluation.~~

12. (Currently amended) The method as claimed in claim 11, ~~characterized in that wherein~~ the statistical values are compared with values from a reference database which contains values characteristic for cells, cell aggregates and/or tissue.

13. (Currently amended) The method as claimed in ~~any of the preceding claims, characterized in that~~ claim 10, wherein the method furthermore includes the cultivation of cells, cell aggregates and/or tissue.

14. (Currently amended) The method as claimed in claim 13, ~~characterized in that wherein~~ the cell cultivation is performed in dependence on the evaluated parameters.

15. (Currently amended) The method as claimed in ~~any of the preceding claims, characterized in that~~ claim 13, wherein the detection and evaluation of the morphological parameters as well as the cultivation of cells are effected automatically.